Communication

iMedPub Journals
www.imedpub.com

Journal of Animal Research and Nutrition
ISSN 2572-5459

2021
Vol.6No.5:92

DOI: 10.36648/2572-5459.6.5.92

Growth in Scottish Blackface Sheep

Salma
Department of Biochemistry, D.K.M College for Women, Thiruvalluvar University, Vellore, Tamil Nadu, 632004,India

***Corresponding author:** Salma

salma@gmail.com

Department of biochemistry, D.K.M. College for women, Thiruvalluvar University, Vellore, Tamil Nadu,632004, India

Citation: Salma (2021) Nematode Parasite Load and Growth in Scottish, Blackface Sheep J Anim Res Nutr. Vol.6 No.5:92

Abstract

Bovine colostrum is important for neonates' health due to its nutritive and non-nutritive components. Heat treat ment of colostrum is a well-established management tool, but it may influence colostrum components and affect the health status of calves. In our previous studies, we had shown that colostrum proteome and serum proteome of calves were altered by heat treatment to different degrees. Our objectives in this study were to investigate the effects of heat treatment on colostrum metabolome and the effect of feeding heat-treated colostrum on the serum metabolome of newborn calves. Further, the changes in serum metabolome from before to after colostrum feeding were characterized. Newborn Holstein female calves (n = 10) were randomized within pairs and fed heat-treated (n = 5; 60 °C, 60 min) or raw (n = 5) colostrum at 8.5% of birth BW by esophageal feeder within 1 h of birth. After a single colostrum feeding, calves were not fed until after the 8 h time point.

Keywords: Plant clinics; Agricultural extension; Joint health services

Received: April 22, 2021, **Accepted:** April 28, 2021, **Published:** May 15 , 2021

Introduction

Blood samples were taken immediately prior to feeding (0 h) and 8 h after feeding. The colostrum and serum metabolome were first analyzed using reverse-phase chromatography and tandem MS, and serum metabolome was then fur ther analyzed using hydrophilic interaction chromatography and tandem MS. In colostrum metabolome, 458 fea tures were identified and 328 were annotated and a trend of separation between raw and heat-treated colostrum could be observed through multivariate analysis. In serum metabolome, 3 360 features were identified and 1 439 were annotated, but no trend of separation was observed between the two groups of calves fed raw colostrum vs. heat-treated colostrum. The serum metabolome presented substantial differences comparing before (0 h) and after colostrum feeding (8 h); in particular, a tripeptide, β-homovaline-β-homoalanine-β- homoleucine, and 1-(2-acetamido-2-deoxy-α-D- glucopyranosyl)-1D-myo-inositol had higher concentrations after colostrum feeding than before, along with other metabolites that were not fully annotated. Based on a relatively small sam ple size, our findings point to the effect of heat treatment on the change of colostrum metabolome, but not on the change of serum metabolome of calves fed raw colostrum vs. heat-treated colostrum [1].

Colostrum is an important source of nutrients, immunoglobulins and biologically active compounds, such as growth factors. Good colostrum management is critical for calves' health, and colostrum is routinely heat-treated to reduce bacterial contamination [2].

However, heat treat ment might impair the function of biologically active compounds that are not heat-stable. We analyzed the metabolite profiles in colostrum and in blood serum of calves, and we found that heat treatment affected the concentration of some metabolites in the colostrum. However, feeding the heat- treated colostrum to calves, we found no evidence that this effect was carried over to the serum metabolite profiles of the calves. ll animal procedures were reviewed and approved by the Cornell University Institutional Animal Care and Use Committee (protocol no. 2018-0021). The study was performed between July and August 2018 on a commercial dairy farm in New York State, USA after obtaining written consent from the owner. Holstein cows were housed indoors year-round in free-stalls and moved to the calving pen following a just-in-time approach.Colostrum from all animals with at least 28 d of dry period length and that were clinically healthy immediately postpartum was eligible for enrollment, as described in Mann et al. (2020a). In brief, colostrum of individual cows was harvested into sanitized buckets and gently mixed with a whisk before taking an aliquot to test Brix% on a digital re fractometer (Palm Abbe, Misco, Cleveland, OH, USA). Colostrum ≥22% Brix and ≥8 l total.

The paper examines the current state of joint plant-animal health ser-vice delivery through plant clinics in mixed farming areas, to provide aclear understanding of farmers' needs for animal advice and the feasi-bility of integrating plant and animal health services [3].

Using data from a plant doctor survey and stakeholder consultation, the paper suggestsways to investigate how agricultural support services can be more integrated across the plant, animal, and human divides to improve thehealth and livelihoods of rural communities [4]

References

1. Hawkes C, Ruel M. The links between agriculture and health: an intersectoral opportunity to improve the health and livelihoods of the poor. Bulletin of the World Health organization. 2006;84:984-90.

.

2. Swanepoel FJ, Stroebel A, Moyo S. The role of livestock in developing communities: Enhancing multifunctionality. University of the Free State; 2010.

3. Fletcher J, Franz D, LeClerc JE. Healthy plants: necessary for a balanced 'One Health'concept. Veterinaria Italiana. 2009 ; 1;45:79-95.

4. Manlove KR, Walker JG, Craft ME, Huyvaert KP, Joseph MB, et al . "One Health" or three? Publication silos among the One Health disciplines. PLoS biology. 2016 ; 21;14:e1002448